

SANYO

No.2158A

2SB1229/2SD1835

PNP/NPN Epitaxial Planar Silicon Transistors

High-Current Switching Applications**Applications**

- . Voltage regulators, relay drivers, lamp drivers, electrical equipment

Features

- . Adoption of FBET, MBIT processes
- . Large current capacity
- . Low collector-to-emitter saturation voltage
- . Fast switching time

(): 2SB1229

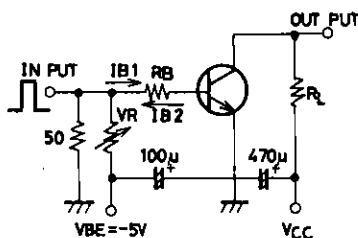
Absolute Maximum Ratings at $T_a=25^{\circ}\text{C}$

			unit
Collector to Base Voltage	V_{CB0}	(-)60	V
Collector to Emitter Voltage	V_{CEO}	(-)50	V
Emitter to Base Voltage	V_{EBO}	(-)6	V
Collector Current	I_C	(-)2	A
Collector Current(Pulse) :nt	I_{CP}	(-)3	A
Collector Dissipation	P_C	0.75	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}\text{C}$

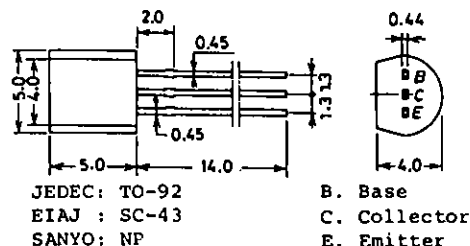
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

		min	typ	max	unit
Collector Cutoff Current	I_{CBO} $V_{CB}=(-)50\text{V}, I_E=0$			(-)100	nA
Emitter Cutoff Current	I_{EBO} $V_{EB}=(-)4\text{V}, I_C=0$			(-)100	nA
DC Current Gain	$h_{FE}(1)$ $V_{CE}=(-)2\text{V}, I_C=(-)100\text{mA}$	100*		560*	
	$h_{FE}(2)$ $V_{CE}=(-)2\text{V}, I_C=(-)1.5\text{A}$	40			
Gain-Bandwidth Product	f_T $V_{CE}=(-)10\text{V}, I_C=(-)50\text{mA}$		150		MHz
Output Capacitance	C_{ob} $V_{CB}=(-)10\text{V}, f=1\text{MHz}$		12		pF
			(22)		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$ $I_C=(-)1\text{A}, I_B=(-)50\text{mA}$	0.15	0.4		V
		(-0.3)	(-0.7)		V

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Switching Time Test Circuit

$10 I_{B1} = -10 I_{B2} = I_C = 500\text{mA}, V_{CC} = 25\text{V}$
 (For PNP, the polarity is reversed.)

Unit(Resistance : Ω , Capacitance : F)**Package Dimensions 2003A**
(unit: mm)**SANYO Electric Co., Ltd. Semiconductor Business Headquarters**

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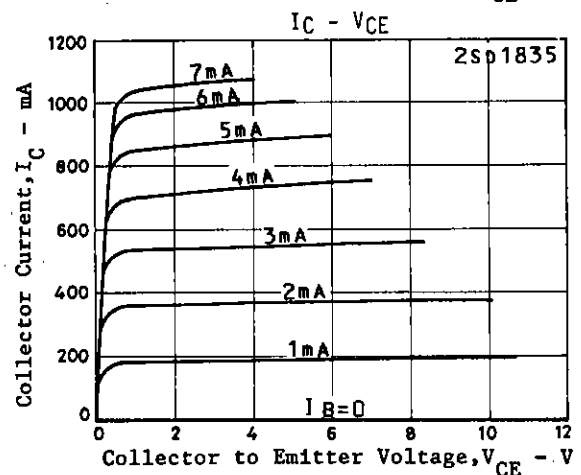
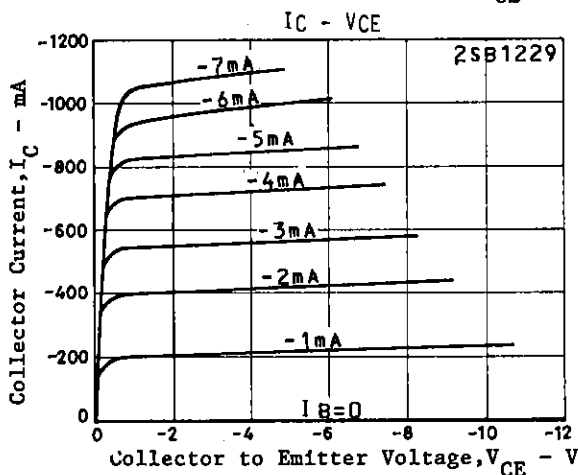
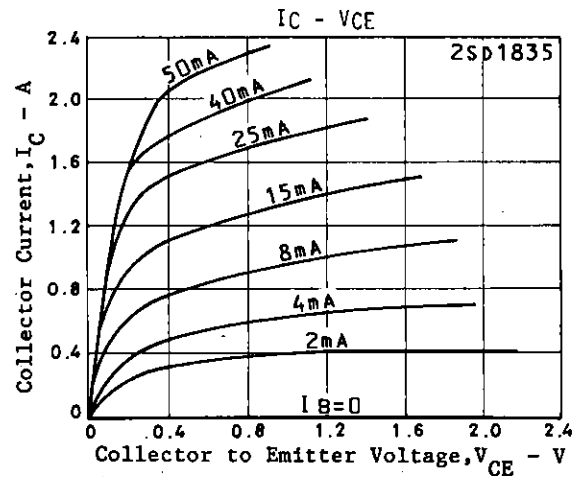
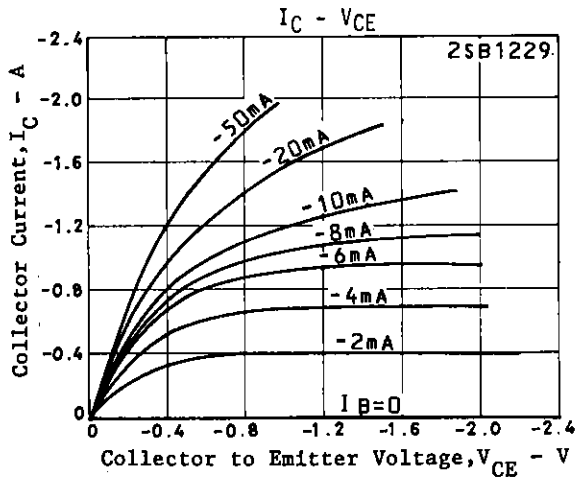
2SB1229/2SD1835

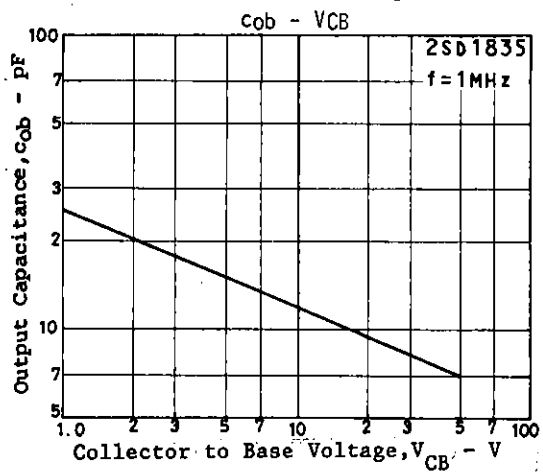
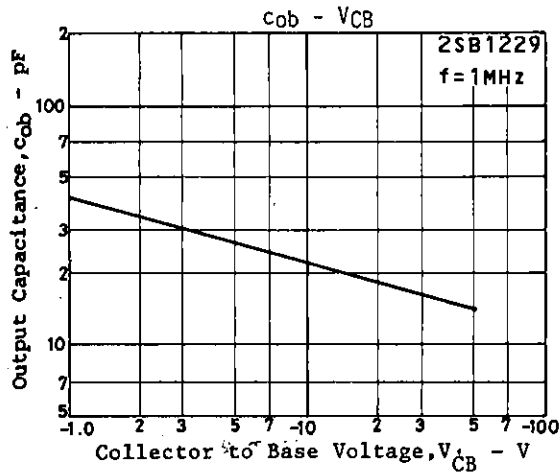
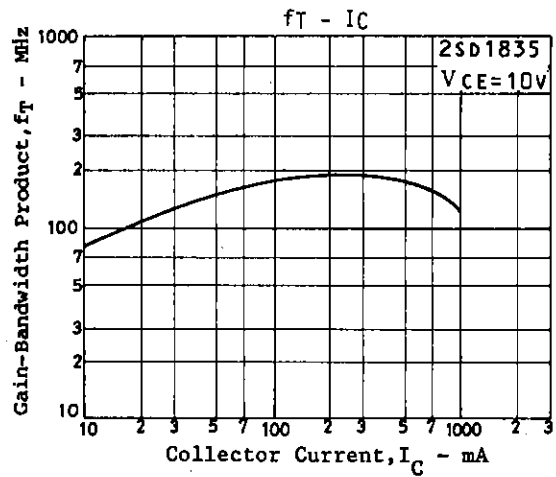
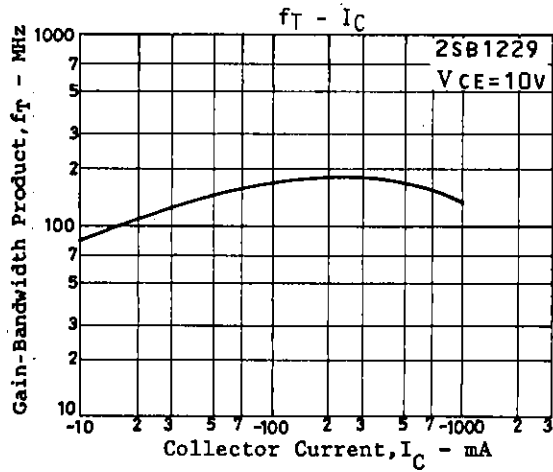
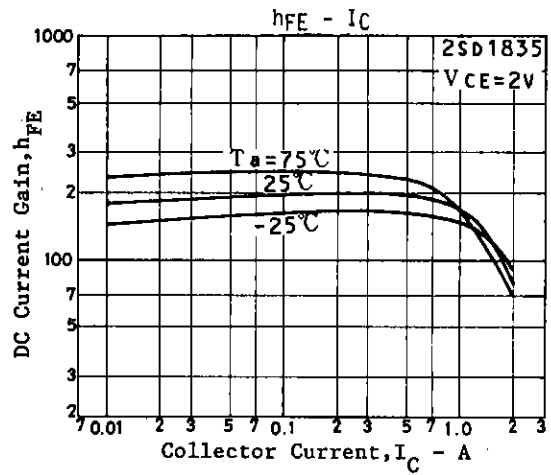
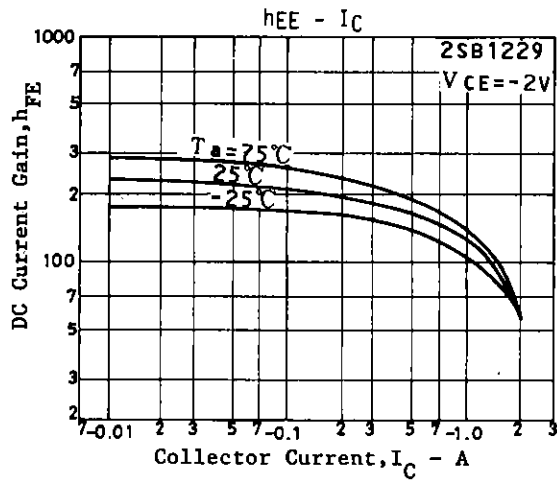
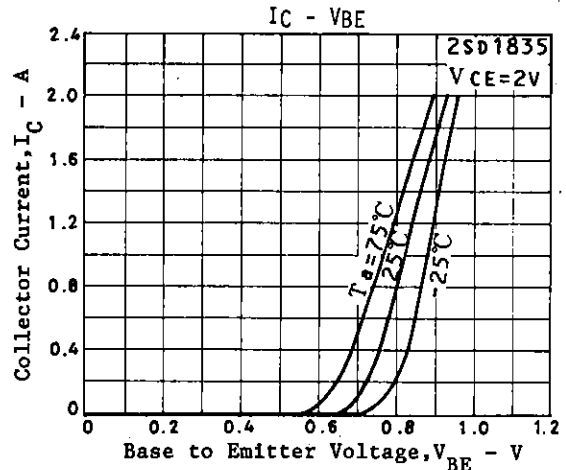
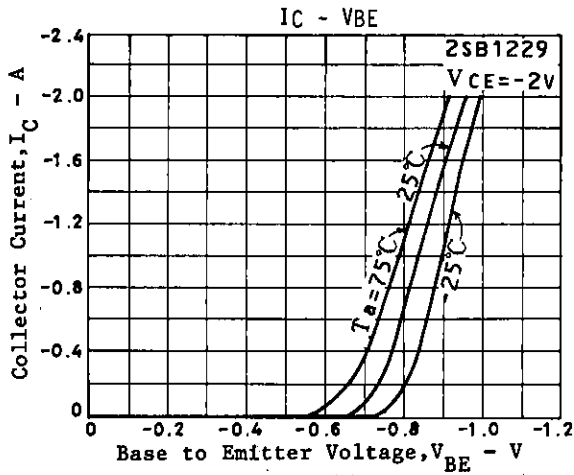
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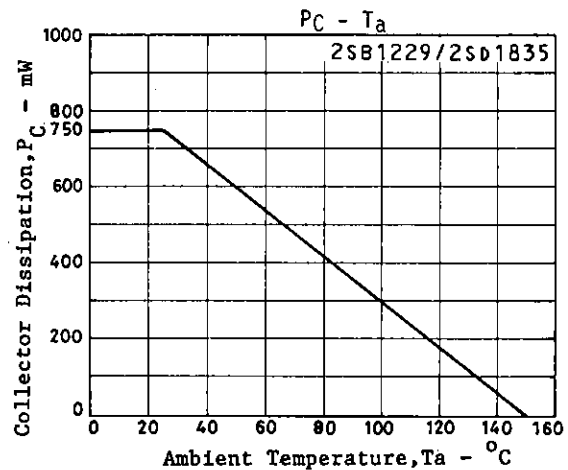
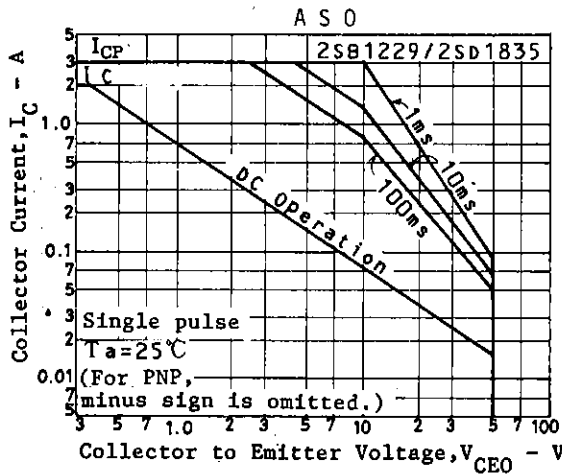
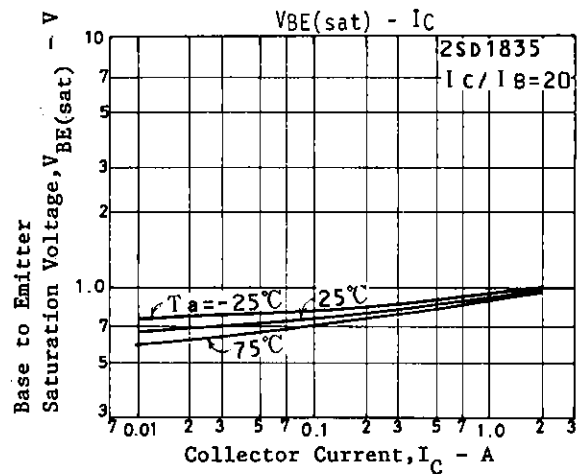
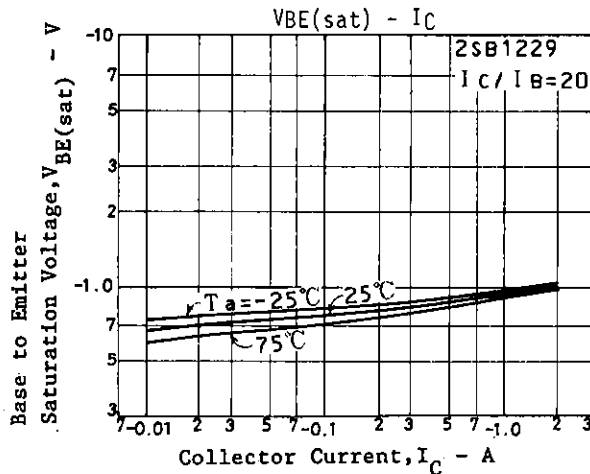
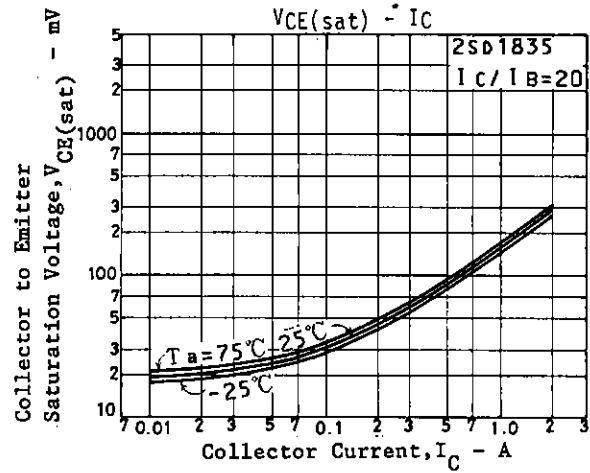
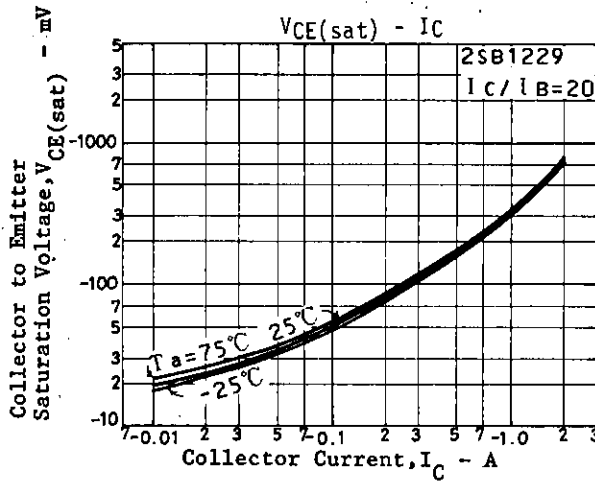
			min	typ	max	unit
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)1A, I_B=(-)50mA$		(-)0.9	(-)1.2	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu A, I_E=0$	(-)60			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1mA, R_{BE}=\infty$	(-)50			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu A, I_C=0$	(-)6			V
Turn-on Time	t_{on}	See specified Test Circuit.		60		ns
				(60)		ns
Storage Time	t_{stg}	"		550		ns
				(450)		ns
Fall Time	t_f	"		30		ns
				30		ns

*: The 2SB1229/2SD1835 are classified by $100mA h_{FE}$ as follows:

100	R	200	140	S	280	200	T	400	280	U	560
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